

## WHAT IS CLAIMED IS:

1. A method for determining dynamic movement parameters of a material object in sports competitions or training, using recording the object motion trajectory in an infrared spectral range, characterized by recording trajectories of infrared footmarks resulting from the interaction of the object with surrounding objects or surrounding environment.
2. The method according to claim 1, characterized by further recording the dynamic of modifications of infrared radiation intensity on different parts of the trajectory of the object motion.
3. The method according to claims 1,2, characterized by further recording trajectories of infrared footmarks in different spectral ranges.
4. The method according to claim 1, characterized by further recording trajectories of shadows resulting from the interaction of the object with concentrated or distributed external infrared sources.
5. The method according to claim 1, characterized in that in big tennis the area of the ball contact with the court and the time moment of the ball impingement with the court surface are determined using the break of trajectories of infrared footmarks.
6. A system of devices for implementing the method according to claim 1, comprising one or more infrared cameras and a computer, characterized by further comprising a mechanical oscillation receiver.
7. The system of devices according to claim 6, characterized by further comprising an external light source.
8. The system of devices according to claims 6, 7, characterized in that the external light source is modulated by frequency or infrared radiation wavelengths and is synchronized with the infrared cameras.
9. The system of devices according to claim 6, characterized in that the infrared cameras have a controlled time of fixing image.
10. The system of devices according to claim 6, characterized in that the one or more infrared cameras comprise an appliance enabling the movement synchronized with the mechanical oscillation receiver.
11. The system of devices according to claim 6, characterized in that the one or more infrared cameras comprise a system of optical filters for modifying the spectral range of sensitivity of the one or more infrared cameras.

12. A method of evaluating skill and development potential of sportsmen, comprising using a method as set forth in claim 1 and a system of devices as set forth in claim 6.